

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. Applicants respectfully request that the foregoing amendments be entered at least because the feature added to claim 17 is already in claim 1, and thus raises no new issues requiring further search or consideration.

Claim 17 is currently being amended. No new matter has been added.

This amendment changes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1-18 are now pending in this application.

Rejection under 35 U.S.C. § 103

Claims 1-18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over EP 1049234 A2 to Takeshi et al. ("Takeshi") in view of U.S. Patent No. 5,732,769 to Stafia ("Stafia"). Applicants respectfully traverse this rejection for at least the following reasons.

Independent claim 1 recites "the heat exchanger being integrally built in the structural member disposed at a bottom of the drive unit and including a cooling passage through which the second refrigerant is passed and another cooling passage through which the first refrigerant is passed, the another cooling passage being disposed inside of the cooling passage through which the second refrigerant is passed." Thus, in claim 1, the heat exchanger is disposed at the bottom of the drive unit, and the cooling passage through which the first refrigerant is passed is inside of the cooling passage through which the second refrigerant is passed. Takeshi and Stafia fail to disclose at least these features of claim 1 in the context of that claim.

Takeshi discloses a system with a motor M, inverter U, and heat exchange portion C (See FIG. 1). The Takeshi system has a circulation passage L for a first coolant (oil) for

cooling the motor M, and a circulation passage F for a second coolant (water), where the passage F has the heat exchange portion C with the circulation passage L (col. 6, paragraph [0036]). The circulation passage F is part of a circuit which includes a radiator R (col. 6, paragraph [0036]). FIG. 6 of Takeshi illustrates some details of the heat exchanger including the oil circulation passage L, the water circulation passage F, and heat transfer wall 13 between the oil circulation passage L and the water circulation passage F (col. 10, paragraph [0049]).

Nowhere, however, does Takeshi disclose a heat exchanger disposed at the bottom of its drive unit, or where the cooling passage through which the first refrigerant is passed is inside of the cooling passage through which the second refrigerant is passed. With respect to the relative disposition of the cooling passages, Takeshi merely discloses that the water circulation passage is adjacent the oil circulation passage. Moreover, Takeshi nowhere suggests that its heat exchanger should be disposed at the bottom of its drive unit.

Staffia fails to cure the deficiencies of Takeshi. Staffia merely discloses a double pipe heat exchanger. Even if Takeshi were modified to include such a double pipe heat exchanger, neither Takeshi nor Staffia make any suggestion that the heat exchanger should be disposed at the bottom of the Takeshi drive unit. Moreover, Staffia does not suggest the application of the double-pipe heat exchanger to a drive unit such as that of Takeshi.

Moreover, Takeshi and Staffia fail to realize the advantages from disposing the heat exchanger at the bottom of the drive unit as recited in claim 1. Disposing the heat exchanger at the bottom of the drive unit allows for a higher cooling efficiency. At the same time, the bottom of the drive unit may function as an oil reservoir. Thus, disposing the heat exchanger at the bottom of the drive unit allows for a heat exchanger which can simultaneously and most efficiently satisfy the function of oil reservoir and the function of heat exchanger. This advantage is not suggested by Takeshi and Staffia.

Independent claim 17 recites “a heat exchanger connected to the first refrigerant passage and the second refrigerant passage and disposed at a bottom of the drive unit, . . .

wherein the first refrigerant passage is disposed inside the second refrigerant passage” and is thus patentable for reasons analogous to claim 1.

The dependent claims are patentable for at least the same reasons as their respective dependent claims, as well as for further patentable features recited therein.

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorize payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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